

SWBAT: discover series and parallel circuits

Jan 4-7:20 AM

Welcome!!!

H. Leslie Grebe

SECA Physics
Wednesday 5 March 2014

* Pick up:

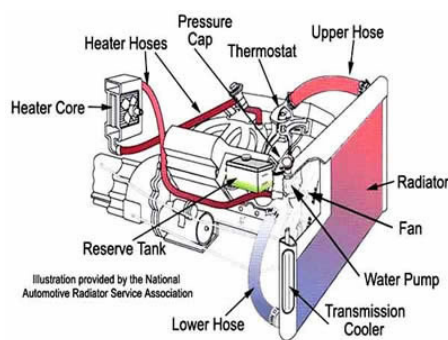
- slip of paper (for later)
- concept sheet from shelf
- white board, marker, eraser

Opening Questions:

Cooling system on a car: better for it to have openings or be closed???

→ LEAKS ⇒ BAD

Centering



Sep 7-7:04 AM



Mystery Resistor - extra credit

- You may work alone or with at most one other person of your choosing.
- Get a "Mystery Resistor" labeled with a letter from Leslie
- Use the same equipment that our teams used in class. Take measurements that will allow you to calculate the resistance (in Ohms) of your resistor.
- You may work when there is spare time in class or arrange other time with Leslie.

Due by 3:00 Friday 3/28

Jan 19-7:12 AM

Puzzle of the day:

With 2 batteries and 2 wires, how many bulbs can you get to light???

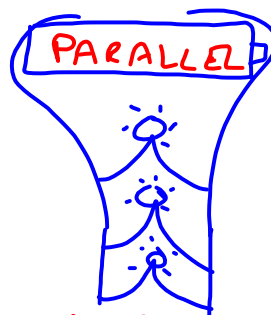
NOT about adding voltage (batteries)

Safety Rule???

IF IT GETS
HOT, STOP
IT



- MORE BULBS
⇒ DIMMER
- ONE PATH
- ALL OR NOTHING



- MORE BULBS
STAY BRIGHT
- MANY PATHS
- STILL WORKS IF
ONE BURNED OUT

Mar 9-7:31 AM

A visit to "Circuitopia"

People:

Moving / speed of people:

"Gotta catch my flight!":

Passport checker:

Speed?

Plane → passport checker → visa checker → plane

Speed?

Break!

2 Passport checkers:

Speed?

Mar 5-8:35 AM

More practice using Ohm's Law:

VOLTAGE = CURRENT × RESISTANCE

$$V = I \cdot R$$

a) $R = 10\ \Omega$, $I = 3\text{A}$, $V = ?$

$$V = I \cdot R = 3\text{A} \cdot 10\ \Omega = 30\text{V}$$

b) $V = 12\text{V}$, $I = 4\text{A}$, $R = ?$



c) $V = 3\text{V}$, $R = 6\ \Omega$, $I = ?$

$$I = \frac{V}{R} = \frac{3\text{V}}{6\ \Omega} = .5\text{A}$$

d) YOUR TURN! MAKE UP A QUESTION ON INDEX CARD...

Mar 10-6:49 AM

Concept sheet: 6 rows total

Bike

Concept	Meaning	Symbol	Units	Analogy
CHARGE	PROPERTY OF PROTONS & ELECTRONS THAT CAUSES ATTRACTION & REPULSION	q	COULOMBS C	
VOLTAGE = ELECTRIC POTENTIAL	POTENTIAL BASED ON POSITION IN AN ELECTRIC FIELD "PUSH"	V	VOLTS V $V = \frac{J}{C}$	PERSON PEDALING ⇒ THE PUSH
CURRENT	THE FLOW OF ELECTRIC CHARGE $= \frac{\text{CHARGE}}{\text{TIME}}$	I $I = \frac{q}{t}$	AMPERE A $1A = \frac{1C}{s}$	- WHEEL CHAINS MOVING
RESISTANCE	OPPOSITION OF CURRENT "AGAINST THE FLOW"	R	OHMS Ω	BRAKES
OHM'S LAW	VOLTAGE = CURRENT TIMES RESISTANCE	$V = I \cdot R$	$V = I \cdot \Omega$	HOW HARD DO YOU PEDAL? BRAKE AFFECTS SPEED

$$\frac{q}{I \cdot t}$$

$$\frac{V}{I \cdot R}$$

Feb 23-7:34 AM

Daily 3 Questions

CP No homework

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. Are the bulbs brighter in series or in parallel?

2. What is the name for a circuit that has more than one path (series or parallel)?

3. $I = 3A$ & $R = 10\Omega$ $V = ?$

3. What happened to the flow when the checker went on break?

$$V = I \cdot R = 3A \cdot 10\Omega = 30V$$

Feb 18-6:59 AM